

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
SATOSHI SHIMIZU ET AL : ATTN: APPLICATION DIVISION  
SERIAL NO: NEW U.S. APPLICATION :  
FILED: HEREWITH :  
FOR: MIS TRANSISTOR AND METHOD:  
OF FABRICATING THE SAME

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

SIR:

Prior to a first examination on the merits, please amend the above-identified application as follows:

IN THE SPECIFICATION

Please amend the specification as shown in the marked-up copy following this amendment.

Please replace the paragraph at page 2, lines 8-16, with the following text:

Then, this structure is heated under a proper atmosphere for forming silicide films 10 by the silicon substrate 1 and the polycrystalline silicon forming the gate electrode 5 (see Fig. 49). The composition of these silicide films 10 is expressed as  $MS_x$ , assuming that M represents a metal element forming the metal film 9, for example, where x represents the ratio of silicon atoms to the metal atoms. In this case, a short-time heat treatment (rapid thermal annealing) is generally performed through a lamp annealing furnace. The heat

treatment which is performed through the lamp annealing furnace immediately after deposition of the metal film 9 is hereafter referred to as first RTA.

Please replace the paragraph at page 2, line 23, through page 3, line 8, with the following text:

However, when the silicide films formed through the aforementioned process are made of titanium silicide  $\text{TiSi}_x$ , for example, further heat treatment is performed at a high temperature or over a long time for forming titanium silicide films of  $\text{TiSi}_2$  having a different composition or structure, since the electric properties of titanium silicide  $\text{TiSi}_x$  are insufficient. Also in case of changing the composition or structure of titanium silicide, a short-time heat treatment is generally performed through a lamp annealing furnace. The short-time heat treatment employed for changing the composition or structure of such silicide films is hereinafter referred to as second RTA. Due to the silicide process employing the aforementioned steps, an electrode can advantageously be formed selectively only on a region exposing a silicon surface on the silicon substrate 1.

#### IN THE CLAIMS

Please cancel Claims 1-9 without prejudice.

#### REMARKS

Favorable consideration of this application, as presently amended, is respectfully requested.

The present new application is a divisional of copending parent U.S. application serial no. 08/874,410.

In that parent application Claims 10-13 were withdrawn and cancelled subject to a Restriction Requirement set forth on December 3, 1999.

The present new Divisional application is submitted to further prosecute those withdrawn and cancelled Claims 10-13. Thus, by the present Preliminary Amendment Claims 1-9 are cancelled so that Claims 10-13 are pending.

The present Preliminary Amendment also amends the specification to correct for minor grammatical informalities, as in the parent of the present application.

The present application is believed to be in condition for a full and thorough examination on the merits. An early and favorable consideration of the present application is hereby respectfully requested.

Respectfully submitted,

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<b>Marked-Up Copy</b>	
Serial No:	<i>new DIV App.</i>
Amendment Filed on:	<i>December</i>

IN THE SPECIFICATION

Please amend the specification as follows:

Please replace the paragraph at page 2, lines 8-16, with the following text:

--Then, this structure is heated under a proper atmosphere for forming silicide films 10 by the silicon substrate 1 and the polycrystalline silicon forming the gate electrode 5 (see Fig. 49). The composition of these silicide films 10 is expressed as  $MSi_x$ , assuming that M represents a metal element forming the metal film 9, for example, where x represents the ratio of silicon atoms to the metal atoms. In this case, a short-time heat treatment (rapid thermal annealing) is generally performed through a lamp annealing furnace. The heat treatment which is performed through the lamp annealing furnace immediately after deposition of the metal film 9 is hereafter referred to as first RTA.--

Please replace the paragraph at page 2, line 23, through page 3, line 8, with the following text:

--However, when the silicide films formed through the aforementioned process are made of titanium silicide  $TiSi_x$ , for example, further heat treatment is performed at a high temperature or over a long time for forming titanium silicide films of  $TiSi_2$  having a different composition or structure, since the electric properties of titanium silicide  $TiSi_x$  are insufficient. Also in case of changing the composition or structure of titanium silicide, a short-time heat treatment is generally performed through a lamp annealing furnace. The

short-time heat treatment employed for changing the composition or structure of such silicide films is hereinafter referred to as second RTA. Due to the salicide process employing the aforementioned steps, an electrode can advantageously be formed selectively only on a region exposing a silicon surface on the silicon substrate 1.--

IN THE CLAIMS

Claims 1-9 (Cancelled).